

**A B S T R A C T**

The invention provides processes for selectively oxidizing carbon monoxide from an input gas stream that contains carbon monoxide, oxygen and hydrogen. The process includes the step of contacting the input gas stream with a preferential oxidation catalyst. The preferential oxidation catalysts are copper-based catalysts containing low concentrations of platinum group metals. In some embodiments, the processes of the invention are conducted using preferential oxidation catalysts having an oxide support on which is dispersed copper or an oxide thereof, a platinum group metal and a reducible metal oxide. In other embodiments, the processes of the invention are conducted with a preferential oxidation catalysts having a cerium oxide support on which is dispersed copper or an oxide thereof and a platinum group metal.

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